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Short Communications

Malleus osteotomy: improving access to the anterior tympanum

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Abstract
Access to the anterior tympanic cavity is often restricted by the handle of the malleus. The aim of this paper is to describe a surgical malleus osteotomy that allows the malleus handle to swing superiorly. The authors have found few problems related to this technique, especially with regard to restoration of normal post-operative hearing.

Key words: Malleus; Osteotomy; Ear, Middle; Surgical Procedures, Operative

Introduction

Access to the anterior tympanum is difficult in pathology such as cholesteatoma that enters the eustachian tube, middle-ear glioma, and some cases of glomus tympanicum. Access to this region of the middle-ear cleft is hindered by the handle of the malleus. The authors describe a technique that has markedly improved access by temporarily swinging the malleus handle superiorly.

Surgical technique

Following a standard endaural approach to the middle ear and reflection of the tympanic membrane, an osteotomy of the malleus is made inferior to the tensor tympani insertion, using House Dieter malleus nippers (Figure 1). This dramatically improves access to the anterior middle ear and eustachian tube orifice. The whole of the pars tensa is reflected superiorly hinged on the pars flaccida (Figure 2). The posterior and anterior malleolar ligaments may also be reflected superiorly, or left attached.

Discussion

Many surgical otology books are vague when describing access to pathology involving the anterior tympanum. The authors' technique has not been reported previously. A review of the literature reveals several references to traumatic malleus handle fracture.[1–4] In each of these series a conductive hearing loss associated with fracture of the malleus was reported.

Post-operative review of the authors' patients at six weeks, six months and one year revealed a normally healed tympanic membrane with no audiometric evidence of conductive hearing loss in four patients, and a 25 dB loss with a perforation in one patient. In each case, the pars tensa flap containing the distal limb of the osteotomized malleus was quite simply restored to its anatomical position at completion of surgery. The authors postulate that a surgical osteotomy is less traumatic to both the overlying tympanic membrane and to the vascularity of the malleus handle than a ragged fracture secondary to some form of trauma. Consequently, the authors' patients did not experience the post-operative hearing loss that is anticipated with traumatic malleus

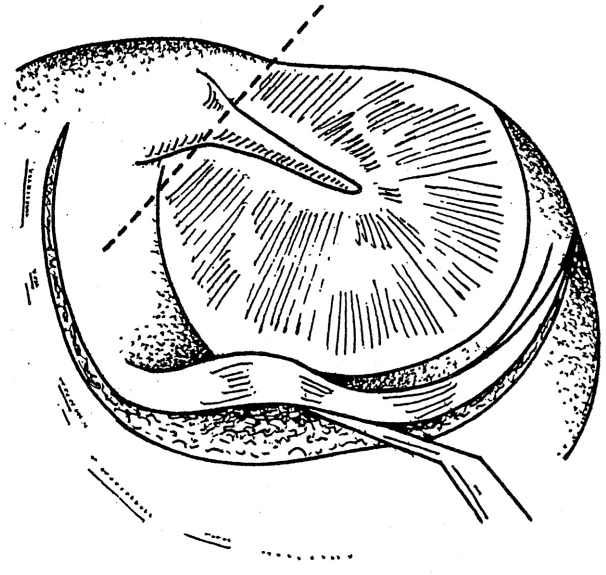

Fig. 1
Site of malleus osteotomy, medial to tympanic membrane.

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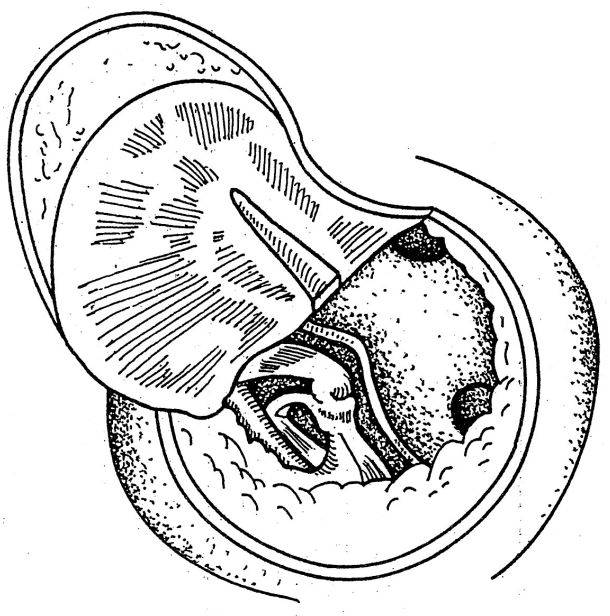

FIG. 2
Superior reflection of the tympanic membrane on its hinge mechanism.

handle fracture. The one case with 25 dB loss was attributed to the perforation.

The simplicity of this technique, combined with excellent restoration of normal hearing physiology by near perfect healing of the osteotomy site, makes this a very attractive approach to the anterior middle-ear cleft.

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